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Changing academic work places: the introduction of open-plan offices in universities

Changing
academic
work places

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1119

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Abstract

Purpose – The purpose of this paper is to investigate the relation between the spatial intervention of open-plan offices in a university, the consequential change in work practices of faculty members and how these practices appropriate the designed space.

Design/methodology/approach – The authors executed a two-year longitudinal ethnographic study following the case of the science faculty, which moved from a traditional office setting to open-plan offices. The authors studied the space and interviewed staff before, during and after the introduction of open-plan offices.

Findings – Findings show that the new spatial setting triggered staff members to attribute certain meanings and practices of adaptation which were, partly, unintended by the design of the open-plan offices.

Research limitations/implications – This paper contributes empirically grounded insights into the (un)intended consequences of a spatial intervention in terms of how staff members, far from being passive, attribute meaning and alter their work practices leading to unprecedented organizational changes.

Practical implications – For change consultants, facility managers and university managers the outcomes of this paper are highly relevant.

Social implications – Large budgets are spent on new office concepts at universities but the authors do know little about the relation between spatial (re)design and organizational change.

Originality/value – The introduction of new office concepts, spatial redesign and co-location is for many academics highly emotional.

Keywords Change, Organizational space, University campus, Office redesign, Open-plan office

Paper type Research paper

Introduction

Open-plan offices and other office redesign concepts such as flexible, innovative or alternative workplaces, hot desking and office landscaping have attracted much attention in organization studies (e.g. McElroy and Morrow, 2010; Kornberger and Clegg, 2004; Brennan *et al.*, 2002; Elsbach and Bechky, 2007; Van Marrewijk and Yanow, 2010). The physical features of office redesign have been identified as factors that can trigger organizational change (Hancock, 2006; Cameron, 2003). Similarly, constructing a new corporate building, renovating existing buildings and (re)designing interior spaces can be seen as important facets of organizational transformation (Van Marrewijk, 2009). Therefore, architecture is, according to Kornberger and Clegg (2004), a powerful intervention in changing organizational work practices. Work practices are here perceived both as individual activities and as a collective, social category. They are accomplished by and embodied in people engaged in a collective series of activities organized around specific forms of knowledge (Nicolini *et al.*, 2003). Spatial settings shape work practices and interaction, which are reshaped by interactions of employees in return (Hernes *et al.*, 2006). This process of spatial production and reproduction is recursive (Hernes *et al.*, 2006). Spatial practices are, thus, simultaneously work practices (O'Toole and Were, 2008).

In line with the increasing popularity of office redesign in public and private organizations, universities have introduced open-plan offices to house their academic and supporting staff (e.g. Wilhoit *et al.*, 2016; Lancione and Clegg, 2013; Gastelaars, 2010; Beyes and Michels, 2011).



Open-plan offices are rooms shared by four or more people, where workstations are arranged in groups with minimal physical barriers (Danielsson and Bodin, 2008), and which include flexible, innovative and alternative workplaces (McElroy and Morrow, 2010). For example, Lancione and Clegg (2013) described the introduction of flexible workspaces that came along with the construction of the new “iconic” UTS Business School in Sydney, while Gastelaars (2010) showed how the Dutch University of Utrecht introduced open-plan offices to improve the interaction between staff and students. Like other organizations, universities create open-plan offices with the intention of increasing productivity, efficiency and collaboration, while decreasing costs (Wilhoit *et al.*, 2016; Lancione and Clegg, 2013; Gastelaars, 2010). However, prior research has shown that outcomes of such spatial interventions are complex (Irving, 2016), unpredictable and unintended (Kenis *et al.*, 2010) and even adverse (Wilhoit *et al.*, 2016). For example, an ethnographic studies of corridors in a large university building (Hurdley, 2010) showed how professionals used to corridors not as passageways but as places to make work-related decisions.

Though it has been established that spatial interventions can shape or affect work practices, gaining insight into how this happens has not yet been fully addressed in change management literature (Tyler and Cohen, 2010; Irving, 2016). The spatial intervention process is particularly interesting in universities which are generally characterized by professional autonomy and unorthodox managerial structure (Wilhoit *et al.*, 2016). Wilhoit *et al.* (2016) emphasized the adverse, unintended social consequences of spatial interventions in universities, such as resistance, lack of ownership and staff members threatening to leave the university. The authors encourage scholars to consider “how universities might function differently,” such as the autonomy of staff and non-traditional management, going as far to claim that “open offices may not be effective in university environments” (Wilhoit *et al.*, 2016, p. 806). Therefore, the aim of this paper is to explore the introduction of open-plan offices in universities in relation to the change of work practices of academic and support staff.

The central research question in this paper is:

RQ1. How does the introduction of open-plan offices at a university affect the work practices of staff members and how do those practices appropriate the space in return?

To answer this question, a longitudinal ethnographic study of the implementation of open-plan offices at the science faculty at Dutch Campus University has been conducted from 2011 to 2013. We studied the spatial intervention, including the corresponding meanings and practices of faculty staff members, before, during and after the move from the Main building, with traditional private workplaces, to the Start building with open-plan offices. In this way, we gained insight into the complex process and outcome of the spatial redesign process in terms of human responses and adaptations within a specific organizational setting.

The contribution to the academic debate on spatial settings is threefold. First, this paper extends theory on the mutual and recursive relation between spatial design and organizational change with empirically grounded insights into how a spatial setting can change work practices and vice versa (e.g. Elsbach and Pratt, 2007; Van Marrewijk and Yanow, 2010). Second, we address the call for more longitudinal, empirical research that follows a spatial intervention from its abstract plan into tangible socio-spatial productions, which are limited in organizational change studies (Gieryn, 2002; Peltonen, 2011). Third, from a pragmatic standpoint, we contribute to a moderate, yet growing pool of research on the increasing introduction of open-plan offices in universities (e.g. Wilhoit *et al.*, 2016), questioning the suitability of such a spatial design for academic staff and demonstrating how they might respond and cope.

The structure of this paper is as follows. First in the theoretical section, the relation between spatial intervention and organizational change is reviewed and discussed, and a practice-oriented framework is constructed. Then, the methods of studying change in spatial settings are described, including an ethnographic approach to obtain an in-depth understanding of spatial design, use, practices and perceptions. We then present our findings structured around the spatial intervention and its effect on the work practices of academics and support staff. In the discussion, we analyze the findings to cast light on the (un)intended consequences of the spatial redesign of open-plan offices. Finally, the research question is answered in the conclusion and the contribution to the academic literature is discussed.

Spatial interventions and organizational change

Although the physical features of office redesign have been identified as factors that can trigger organizational change (Hancock, 2006; Cameron, 2003; Kornberger and Clegg, 2004; Van Marrewijk, 2009) their outcomes yield mixed findings (Elsbach and Pratt, 2007). Managerially orientated scholars perceive the relation between spatial redesign and change to be powerful in creating institutional transformations (Duffy, 1980; Cameron, 2003; Becker, 1981). They understand interventions in physical settings as tools for mediating social change (Hancock, 2006), for strategic change (Higgins *et al.*, 2006), for mingling office and factory workers (Kotter and Cohen, 2002) and for supporting collaboration between project and staff members (Allen and Henn, 2007). These studies suggest that bringing people together in open-plan offices maximizes communication, increases knowledge sharing activities and, consequently, increases collaboration among employees (e.g. Boutellier *et al.*, 2008). Thus, designing specific physical spaces of open-plan offices intends to shape collaboration by promoting unplanned, spontaneous encounters (Fayard and Weeks, 2007).

Conversely, other scholars question the positive relation between spatial design and collaboration (e.g. Bektas, 2013; Irving, 2016). For example, Irving (2016) found that the open-plan office is better conceptualized as a collaborative scaffold; not spatial distance but the affordance to find collaborative partners showed to be important. In another example, Bektas (2013) observed that the employees' self-modification of spatial settings in an open-plan office resulting in territories between employees of engineering, architecture and client organizations. The demarcation of group territory prevented employees from engaging in collaboration (Brown *et al.*, 2005; Pepper, 2008). In line with these findings, Pepper (2008) showed that employees working in open-plan offices were worried to distract others, actually resulting in less collaboration. It follows that spatial interventions impact the fabric of social relations and raise questions concerning human experience, behavior and identity (Dale and Burrell, 2010), as organizing space is also about organizing social order (Kornberger and Clegg, 2004).

Considering the above discussion, it is important to construct a critical lens to investigate the introduction of open-plan offices in a university and its effect on work practices and vice versa. To grasp processes of space production, we make use of the spatial triad of Lefebvre (1991) which is further developed to study workplaces by organization scholars (e.g. Dale and Burrell, 2008; Beyes and Michels, 2011). A distinction is made between space as conceived, lived and perceived, which are related to three overlapping aspects of social space; representations of space, representational space and spatial practice (Dale and Burrell, 2008, pp. 7-11). First, representations of space that planners, designers, engineers and architects produce, when trying to implement prominent ideologies and achieve change goals are characterized as conceived spaces. Through spatial design ideology, thus, becomes actions. Second, representational space is characterized as lived space and how employees passively experience space and make the symbolic material. Third, spatial practice is linked to perceived space and understood as daily non-reflexive routines of space-related practices that gradually developed throughout history.

In Lefèbvre's understanding, and ours, the spatial and the material should not be seen as separate from the social (Dale, 2005; Leonardi *et al.*, 2012). This is also referred to as socio-materiality, where "social processes and structures and material process and structures are seen as mutually enacting" (Dale, 2005, p. 641). From this perspective, space and materiality are seen as not only having an instrumental dimension, but simultaneously as having a social and symbolic dimension. According to Orlikowski (2007), materiality and spatial settings are crucial in the understanding of practices and how they can change, transform or be modified. That is to say, spatial configurations and material objects, such as meetings rooms, desks, computers and books, resemble important artifacts enabling practices to be accomplished (Nicolini *et al.*, 2003). In this sense, practices meld space and materiality with meaning, behavior, discourse, culture and other phenomena we typically consider social (Leonardi *et al.*, 2012).

Methodology

We conducted ethnographic research on the case of the science faculty at Campus University where open-plan offices were introduced between 2010 and 2013. Ethnographic research is an excellent method for the in-depth study of the lived experiences and daily practices of research participants (Yanow, 2006; Ybema *et al.*, 2009). In this way, practices and experiences of academic and support staff have been explored in a longitudinal fieldwork, with a specific focus on practices, design, materiality, esthetics and sense making concerning the introduction of open-plan offices in the science faculty, 1 of the 12 faculties of the Campus University. The science faculty, with more than 3000 students, employed 180 academic staff and 50 supporting staff subdivided in six departments. Data on the academic staff, support staff and students have been collected through the methods of observation, participant observation and semi-structured interviews during three phases: (I) the last month of the science faculty in the Main building; (II) the first period after the moving to the Start building; and (III) one year later another three months (see Table I).

In phase I, December 2010, the research team consisting of the authors together with a Master student, did observations at the science faculty in the Main building and conducted semi-structured interviews. Observations were made of daily work routines, meetings, celebrations as well as informal gatherings such as lunch and coffee breaks and hallway conversations. In this way researchers gained a "feel" for organizational behavior within the spatial settings of an organization (Warren, 2008). Semi-structured interviews were conducted with 11 members of the academic staff, 5 members of the support staff and 4 students (see Table I). The interview topics were work practices, social work context and experience of space.

In phase II, which was from January to May 2011, the research team observed the move and the commissioning of Main and conducted 12 more semi-structured interviews. The Master student participated for three days a week in the science faculty and observed organizational rituals such as the new year speech meeting, birthday celebrations, good-bye receptions and lunches. In phase III, which lasted from February to May 2012, the authors and another Master student conducted semi-structured interviews with six members of the academic staff, seven members of the support staff and four students (see Table I). Like in phase I, observations were made of daily work routines, meetings, celebrations as well as informal gatherings such as lunch and coffee breaks and hallway conversations. In total, 49 semi-structured were conducted (see Table I). Pictures of work places in Main and Start were made by the research team to analyze and to reanalyze, if necessary, spatial settings in the greatest possible detail (Van Marrewijk and Broos, 2012). Furthermore, the team transcribed all interviews for the analysis and wrote a management report.

Resp. no.	M/F	Group	Phase I	Phase II	Phase III
1.	M	Academic	x		
2.	M	Academic	x		
3.	F	Academic		x	x
4.	F	Academic	x	x	
5.	M	Academic	x		x
6.	M	Academic	x		x
7.	M	Academic	x		x
8.	F	Academic	x	x	
9.	F	Academic	x		x
10.	M	Academic	x		
11.	M	Academic	x		
12.	M	Academic	x		
13.	F	Academic			x
14.	M	Academic		x	
15.	F	Academic		x	
16.	F	Academic		x	
17.	M	Academic		x	
18.	F	Academic		x	
19.	F	Support	x		
20.	F	Support	x		x
21.	M	Support	x		x
22.	M	Support	x		x
23.	F	Support	x		x
24.	M	Support			x
25.	F	Support		x	x
26.	F	Support		x	
27.	M	Support			x
28.	F	Support		x	
29.	F	Student	x		
30.	F	Student	x		
31.	M	Student	x		
32.	M	Student	x	x	
33.	F	Student			x
34.	M	Student			x
35.	M	Student			x
36.	F	Student			x

Table I.
Interview list of
science faculty staff
members and students

Analysis

The coding of our qualitative data was inspired by the first-order concepts and second-order themes of Gioia *et al.* (2013). The first-order coding is more empirical and informant centric while the second-order coding is more conceptual and researcher centric, based on theoretically informed themes. Additionally, coding was guided by our research question to ensure the codes provide evidence supporting analysis and interpretation (LeComte and Schensul, 2013). In applying this methodology, we found the first-order codes of practices, spatial settings, experiences, materials and design, which are based primarily on empirical evidence representing the basic elements of open-plan offices that were studied and analyzed in the field. Thereafter, we reduced the data into larger categories based on the spatial triad of Lefebvre (1991). More specifically, we analyzed how open-plan offices affected the work practices of staff members according to our research question. This led to the second-order coding and found three entirely new work practices: selecting type of work place, selecting location of work place and creating private work places. Three more work practices were found to be changed; doing of research, meeting with colleagues and meeting with students. And finally, a large number

of old practices related to hierarchy, values and norm had not changed. We presented the research finding to the science faculty and the Campus Facility Management and included their reactions in the final analysis.

Case description: the introduction of open-plan offices at university campus

Three externally imposed changes triggered the introduction of open-plan office space at the Campus University. First, there was a general need in the Netherlands for more office space as the number of students had grown with more than 20 percent, while no new buildings had been constructed (TU-Delft, 2016). Therefore, the Campus University launched an ambitious plan to redesign the campus space. This plan foresaw in the replacement of old buildings by new ones, a new, lively and open campus square and an integral connection of this square with the nearby business district. Furthermore, office space would be doubled to 500.000 m² enabling new and other users to move into the new campus and enabling scientists, students and industry partners to work across physical borders of faculties and disciplines. Second, the Campus University wanted to use floor spaces more efficiently and reduce costs with 30 percent; a trend in line with other Dutch universities (TU-Delft, 2016). Third, the negative perception of Main by both staff members and students adversely influenced the public image of the Campus University. Main, designed and built in the 1960s, is an example of modernist architecture (e.g. Ludwig Mies van der Rohe). The style of this 90.000 m² building is sober, business-oriented and pragmatic. Now, 50 years later, a majority of staff and students perceive this building to be an outdated relic from a former epoch.

The introduction of open-plan offices was an important pillar in the development of the new campus. This concept contained a broad scope of spatial, social, organizational and technological developments and regulations, intended to stimulate informal meetings, collaboration and knowledge exchange among academic staff and students. The facility managers of the Campus University looked for an integral coherence between physical settings, information technology and social organization by stimulating: collective and responsible use and management of facilities; flexible and personal selection of work facilities to do work; digitalization and central storage of information; and open work environment and transparency to stimulate communication, meetings, social contact and collaboration. The first new building, Start, was designed in 2009 to implement the above-discussed vision at the science faculty. This semi-permanent building of 10.000 m² is one of the entrance gateways to the central plaza of the Campus University. The new building contained 325 new workplaces and teaching rooms among which a large lecture hall equipped with 550 chairs.

Conceived space: spatial scripting in Start

With Lefebvre's (1991) first dimension of conceived space in mind, we focus on the spatial intervention as planned by the facility managers, architects and engineers and with the intention of achieving certain goals. Start had three levels with open-plan offices. The spatial interventions in Start were: creation of different types of rooms, open work places and lounge settings; construction of transparent glass walls; closing off of the work places from students; creation of a mixed zone where staff and students meet; and the introduction of a clean desk policy. The architect combined business-like esthetics such as gray carpets, gray-white striped wallpaper and white bookshelves, with brightly colored furniture to present the image of a fashionable office. The stair ways, corridors and rooms are made of shiny concrete, and many of the walls and doors are made of glass. Every floor was divided into different areas comprising a group of mixed work places. There were one-person rooms for concentration work and two-person rooms for possible collaboration in research and teaching (see Figure 1). Furthermore, there were large open spaces for stimulating group

Figure 1.
One-person
room in start



work, knowledge exchange and half-concentrated work. Finally, lounge places could be used for less concentrated work such as mail checking, correcting students' work and informal meetings and discussions (see Figure 2). Apart from these work places, at each floor two large and three to four small meeting rooms were available. The diversity of work places allowed faculty staff to work at different places for different work practices:

[...] you choose a type of working spot for the task you have to do on that moment. To offer all the working spots to everyone, they have to be shared. Therefore nobody owns his or her own working place. (Working-spot-guide of Start; p. 3)

A large part of the building was only accessible for staff members who used a special chip card to enter. This excluded students, whereas before the spatial redesign they could enter as they pleased. Staff and students had to meet each other at the first floor in a space, named "mixed zone." This zone contained a mixture of a cafeteria, a student service desk, student unions, advisors and mentors and a number of meeting rooms.

The open-plan office concept was presented by a consultancy firm with positive sounding statements and promising words of new work practices. The intention was to make academics and supporting staff aware of their spatial use by dividing their daily work



Figure 2.
Lounge working
places in start

into small time zones. For each time zone, the employee could make a selection in what kind of work space is needed. For instance, if one had meetings all morning, then a lounge place would be suitable to check mails in the afternoon. If an employee had to write an article in the morning she would select a concentration room, but if she had to teach in the afternoon it was expected she would check out and leave the concentration room without leaving any trace, the so called “clean desk” policy. Finally, only a 2 m cabinet of books for each academic was allowed. All the other books had to be taken home or digitalized.

Representational space: perceptions of the old vs new building

The second dimension of Lefebvre’s (1991) triad is representational space, which involves space as directly lived through its associated images and symbols. Here, we focus on the employees’ interpretations and subjective experiences of Main and Start. Respondents who were asked about their perceptions of Main – before they moved to Start – were positive about their working rooms but overall negative about the building (see Table II). After moving to Start, these respondents were more negative about their workplaces, which were no longer private, but more positive about the building:

I’m really very positive. I think it is fantastic. It is beautiful. I like the carpet, the furniture is amusing and nice, it looks good, the chair fits well. Yes, aesthetically it is nice and clean. When you take people from Main to here, then they are astonished. (Interview with respondent April 13, 2012)

The negative interpretation of Main as a “gray bunker” is mainly based upon a negative validation of its modernistic architectural style (see Plate 1). For many years, Main was the only building, and departments were separated over different floors. In our interviews, respondents indicated that before moving to Start, they foremost identified with their department. However, after moving to Start, respondents indicate a stronger identification with the science faculty at large.

Spatial practices: work practices in the old and new building

Research on spatial practices should consider practices and routines that reproduce the prevailing social order in various spatial performances (Lefebvre, 1991). Here we discuss three new work practices related to the use of the open-plan office in Start: selecting type of work place; selecting location of work place; creating private work places, and the change of three existing work practices; doing of research; meeting with colleagues; and of, meeting with students.

Table II.
Experiences of the
main and start
building

Spatial settings	Main	Start
Architecture	Non inspiring, ugly, business, such as, focus at work, large windows and good day light	Comfortable, fresh, nice and spacious
Rooms	Personalized rooms, beautiful view, working in couples, functional, focus at rest and routine	Transparent, little privacy and clean desk
Corridors	Low ceilings, small, dark, gray and stuffy	Personalized bookshelves, transparent, open and movements
Noise	People walking in corridor, ventilator, entrance, elevators and study rooms	Loud talking, walking, conversations, noises carry far and closing doors
Climate	No possibility for window opening	Stuffy, warm, lack of oxygen, and no open windows
View	campus plaza, airport and business district	Limited view
Colors	Gray, concrete	Fresh colors, red
Objects	Radio, lounge chairs, Maria statue, plants and books	Photos and books in corridor, cabinets and kitchen
Metaphor	Concrete bunker, factory and death row	Insurance company



Plate 1.
Corridor in
the main building

Selecting type of work place

From observations and semi-structured, it became clear that respondents prioritized one-person rooms at Start. Employees would reflect upon the work practices that they had to do that day, such as reading, teaching, meeting colleagues, meeting students, writing and often come to the conclusion that these activities required concentration and/or privacy. Especially academic staff labeled their work as concentrated. While in Main most staff members worked in couples in rooms, the dominant preference became one-person rooms according to respondents:

I regularly occupy a one-person room. Generally I do so because it is more quite. In a two-person room it is uncertain who joins the room. In a one-person room you know you can stay there quite. (Interview with respondent March 7, 2012)

The two-person space was selected when someone has to teach for a few hours, or if someone wanted to work in the companion or a (well-known) colleague. These rooms were also selected by employees who thought the one-person rooms were too small, with the intention of excluding a colleague to work in the same space. It was an unwritten rule to ask for permission first before entering an already occupied two-person room. Therefore, a less well-known colleague or, worse, a colleague from another department experienced a barrier to join the already occupied two-person space. Respondents complained about colleagues

occupying a one or two person room while teaching or having meetings all day. Although this is perceived as anti-social behavior, it was claimed colleagues do not intervene because it is understood that everyone, especially an academic, prefers to work in a room. "I think that the idea of sitting in a room fits a scientist." (Respondent April 23, 2012)

It was explained during interviews and conversations that employees generally choosed an open work place if they were teaching or have meetings for a larger part of the day. The break-even point for this choice was four hours of absence from the concentrated work place. Furthermore, these places were selected based upon the preference to be close to one's own study books, to be out of the hot sun or to work together with a colleague or a PhD student.

The lounge places were generally selected for several reasons. First, when all the other places were occupied, for example, on busy days or when people come in late. According to our observations, busy days were Mondays, Tuesdays and Thursdays. Second, if someone was only present for a short duration at the department, and had to leave for teaching, meetings or public gatherings. Third, is when respondents preferred to be close to their books and did not care much for the kind of work place they were occupying. Many of the respondents perceived the lounge places to be "bad places":

These lounge places are really terrible. It is just a crime, you can't adjust these seats properly. [...] After half an hour I already have pain in my back. (Interview with respondent April 22, 2012)

Selecting location of work place

Apart from the above-discussed selection of the type of workplace, employees of the science faculty must also choose the location of the work place. Respondents motivated their choices based upon three arguments. First, and most important, is the location of the books of the academic staff. Although journals and books are increasingly digital, many respondents showed a great desire to work close to their books. They said that they used books for showing when discussing with students and for references when writing. Because there was enough space in Start, nobody reported problems with insufficient bookcases:

I always go to the same spot because we have these books and that spot is next to the books. It is just laziness. I just don't like to walk that corridor. (Interview with respondent March 21, 2012)

Second, academics had a tendency to choose work places far away from busy passageways and the movement of colleagues. Because of the design of the different floors, passageways emerged where employees walked to reach the entrance, kitchen, secretaries or toilets. Third, work places were selected for the absence of noise, or better, the experience of silence. The most silent work places were most popular in the science faculty. These places are situated away from the secretariat, the standing tables where birthdays are celebrated, the lounge places where informal discussions take place and the busy passageways:

I had two-person rooms over there [at a busy corridor] but they are at a very busy place. Honestly, I think that whole corridor is a very unpleasant space, because that is where the movement is. (Interview with respondent March 7, 2012)

Employees did not easily migrate to other work spots, or worse, to other floors. Interestingly, respondents preferred "bad places," such as lounge or noisy work places, to much better work places at other floors. This was because the identification with their own work floor was an invisible but not to be neglected social and physical demarcation for employees (Fayard and Weeks, 2007). Crossing this border was difficult as people did not feel welcome on other floors and sometimes received unwelcome comments. One of our researchers was even asked what she was doing over there when occupying a work place at the third floor. Social control in the inner space is high and thus "strangers" are kept an eye on. We think the migration to other

floors is hindered by social identification with one's own group (Clair *et al.*, 2005). We observed that even when the coffee machine was closer at a different floor, people still got their coffee at their own floor:

I indeed went to the third [floor] because it was very busy on ours. They just look strange at me. I just like that. I really like it from a social perspective. That you see people looking at you; who is this person? At a certain moment I got the impression that I observed people discussing; who is that person who is there in that room? (Interview with respondent April 22, 2012)

Working at home had increased during the first year according to respondents, especially with academic staff. Specifically, people worked at home to write books or research papers. For the supporting staff not much has changed in relation to working at home after the move. Their work is more physically related to Start due to the services they deliver and digital network systems.

Creating private work places

From our observations and interviews, respondents indicated that they worked at more or less fixed work places. Respondents also indicated that their colleagues returned everyday to the same work places. Some respondents admitted that they never worked at another work place and, therefore, have their own fixed work place. Only when this work place becomes occupied, generally on the busier Mondays, Tuesdays and Thursdays, people would select a place close by. Only one respondent admitted working at home on one of these days. A manager of the science faculty has the impression that 80 percent of his employees work at the same workplace everyday for 80 percent of their time. This was acknowledged by respondents a year after the move:

I think I can tell by now where everybody is situated, because they will be at the same spot with a marge of a few rooms to the right or left. (Interview with respondent March 7, 2012)

Indeed, respondents voiced that they rarely changed work places. After regular occupation of a work place by one person, that place would be considered theirs, because nobody else would sit or dare to sit at this particular work place over time. Most respondents, as we observed on the work floors, selected a work place early in the morning, usually the same place everyday, and did not change work places during the rest of the day, notwithstanding other work activities. "When the door is closed this indicates that you don't want to be disturbed." (Interview with respondent March 2012)

During the first year of using the office spaces, formalized fixed work places were negotiated by a number of staff members. Secretaries have acquired a formalized open work place because of their centrality and accessibility to staff. Furthermore, the dean obtained a private room for meetings and private conversations. Other employees can, in principle, use the dean's room but very few do so. The argumentation for formalized fixed work places was that these employees have to: be found easily for staff; hold sensitive conversations; uphold an open door policy; and be representative to receive guests. Several respondents are very critical about these exceptions as this "is a bit of the bankruptcy of the concept" (respondent April 13, 2012). Others apply the new informal rules:

One professor who opposed the concept had occupied a flexible work place in the corner of Start with a beautiful view on new office buildings and the business district. He was surrounded by his bookshelves and everyday he worked at the same work place, we have never seen him sitting elsewhere. (Observations in Start, April 2011)

Some respondents explained that in their professional sector, status is connected to a private office space, and that not having such a room can damage one's professional image. Indeed, observations of the use of space showed that high ranking staff members, such as

professors and the dean, generally have their own private room, while other members of the faculty avoid sitting in those places. Some agree with this: “if I would have a working office and the professor has to sit in the lounge, it wouldn’t feel comfortable for me” (Interview with respondent March 6, 2011). Professors seldom share rooms with colleagues while PhD students will share rooms with two to four people. Student assistants, lowest in hierarchy in the Campus University, have been asked explicitly by staff members not to use one- or two-person work places.

Doing research

The research related activities were perceived by academic staff to be individual tasks, which can be best executed solitarily, without interference by others. In these activities, isolation and the accessibility of books were considered important according to respondents. A larger majority of the respondents claimed to use books for references and inspiration when writing articles. As the number of books is limited to two meters, respondents complained:

I just miss the books around me. This is how I did it for years. When I have to write an article I’m thinking. Then I think, oh, this can be an interesting book and I want to grab that one off the shelf. You work much more unorganized and this is a very organized space. That doesn’t fit with the creative thinking and therefore I feel inhibited. (Interview with respondent April 4, 2011)

In the daily practice of working in Start, most employees complied with the clean desk policy, even a year after the move. “That things have been cleaned under pressure, is maybe not that bad after all” (Interview with respondent March 7, 2012). Although some personalized their work places with small possessions, pictures and paintings, in general “everybody is complying [to the clean desk policy] obediently” (interview with respondent April 22, 2012). However, frequently empty coffee cups and other waste remained on the tables after finishing work. More than half of the respondents complained about the mess, but did not feel responsible for cleaning themselves. The work places in Main were perceived to be private, while most work places in Start were perceived to be public. “In Main you had your own office, then it was your own coffee stain” (Interview with respondent April 3, 2012).

For many employees, complying to the clean desk policy was not easy as they used to pile their work, books, and printed articles on their desks in Main (see Plate 2). Prior to the



Plate 2.
Personal offices in the
main building

move we observed stacks of paper work on the desks in Main. Respondents indicated that those employees who were used to working with digital papers and books, had no problem with keeping their desks clean. With working digitally, printing articles is reduced. Most respondents, however, were still used to printing the articles to read them. Reading from a screen was perceived as uncomfortable, and making digital notes on PDF's was not yet common. Furthermore, the clean desk policy was said to take away from the academic atmosphere at the office:

There is some kind of academic atmosphere, but it is superficial, almost fake. The real academic feeling is missed because what I remember, you came in a professor's office as a student, and then I was enormously impressed by all the books. They are gone and they created a clinical, impersonal atmosphere. Because when you show me your books then by manner of speaking I know who you are. (Interview with respondent April 8, 2012)

Moreover, a year after the move, people were using their own books less, partly because of the spatial distance to their own books. "I use my books less. This has to do with the distance that they are not at my room anymore" (Interview with respondent March 7, 2012). On the other hand, employees used fewer books because they started to work more digitally which can be seen as a positive and intended outcome. Because of the clean desk policy, printing and paper usage was decreased and the organization and documentation of work improved.

Meeting with colleagues

Another consequence of the open-plan office at Start was the visibility and easier meeting of colleagues. Respondent indicated that they met spontaneous much more colleagues. One respondent these meetings "broadened and deepened my research, because you approach the research from more different angels. I think that is a progress" (Interview with respondent April 17, 2011). Because of the transparency of the rooms, it was easier to see who is at the office and step in to discuss something:

Colleagues more frequently visit each other now, because you just see someone sitting. In Main it is just concrete and closed doors. The [Start] building invites, at least at this floor. People just do talk more. (Interview with respondent March 35, 2012)

While it was easier to find each other, the transparency of the rooms influenced the expression of emotions. While in Main all emotions were hidden behind closed walls and could not be overheard, in Start joy, anger and shouting could easily be heard and observed by others. Because of the glass walls, the open office work spots and the perceived lack of privacy induced staff members to hide their negative emotions in conversations. One respondent told us:

So what happens is that the opportunity to spontaneously exchange ideas and emotions, that is what you have to organise [in science]. It is about spontaneous anger and joy, which has become public [...]. So what you notice is that it toned people down. You could say that this makes them more professional. (Interview with respondent April 13, 2012)

In reaction to this toning down of emotions, the glass doors of some discussion rooms were blinded to avoid transparency. These rooms were frequently used by managers and HR staff members to discuss sensitive and difficult topics with academics. Consequently, these cladded rooms were perceived to be "bad news rooms," rooms in which (negative) emotions can be expressed:

This [room] has been cladded, and now everybody says; oh, if you have an appointment with your manager over there, you will lose your job. (Interview with respondent April 22, 2012)

Meeting with students

One the most important spatial interventions was the exclusion of students because a large part of Start is only accessible with an authorization pass. In contrast to Main where students could walk in all day to find their teacher, supervisor or secretary, in Start this is only possible after making an appointment as someone has to let the student in at the entrance. Many respondents were positive about this closure and experience the new space as safer. For some it was even a relief not to have students irregularly interrupting them with questions. For others, the closure caused a loss of informal contact with students, especially for the smaller research groups. "I always like to tell students to just drop by, however, that is not possible anymore" (Interview with respondent April 14, 2011). In sum, the closure had direct consequences for the way staff members and students met each other.

We observed teaching staff to organize walk-in hours for their students in the mixed zone meeting rooms, where there are two rooms for six persons and three rooms for three persons. Staff members met there with students to prevent causing noise and unrest for their colleagues in the enclosed office space. However, the majority of the teaching staff did not do so. They preferred to meet with the students in the mixed zone and take them to their one- or two-person work place or a meeting room inside the enclosed office space. When finished, the teachers walked their students to the locked entrance to let them out. In many cases, the teacher did not know the student by face, making meeting in the mixed zone problematic. While this space was designed to facilitate the meeting of teachers and students, our observations show that this was not always successful:

It is a fact that we see few students over here [the enclosed area]. Look, in Main you opened your door just a little and one could observe students passing by [...]. No one has the feeling of it [Start] could be a university but it also could be an insurance company or accountancy firm. (Interview with respondent March 21, 2012)

The most important reason for staff members not to use the mixed zone space was that in their perception the zone was dominated by students and had, thus, became too busy for a conversation or meeting with students. In the same way, meeting rooms were no longer being used for meetings with students. Indeed, from interviews with students and observations, we learned the deficit of quiet work places and meeting rooms for students in Start. Therefore, groups of students used the meeting rooms for group collaboration projects who had to be asked to leave. If these rooms are reserved, they had to leave the room, and for many students it was unclear whether they could use these rooms. For students who really wanted a quiet place, they returned to Main. The cafeteria seating area in the mixed zone was also used as a work place, putting more pressure on the availability of seating places. The deficit of student work places had a direct relation to the popularity of Start. Students from different departments came to work in this building to meet other students in close vicinity of food and printer facilities. Consequently, it was easier for staff members to reserve a meeting room in the enclosed area of Start.

Summarizing the findings, we observed some new work practices that were not observed in Main and these are related to selecting and negotiating of work places, keeping the desks clean, and meeting students through appointments (see Table III).

Discussion

This study concerned how the introduction of an open-plan office affected the work practices of academic and support staff and how those practices appropriated the spatial settings in return. The spatial intervention found in this study included open work spaces, business like esthetics, glass walls, one and two person rooms, lounge places, a locked entrance and a mixed zone. These findings are in line with earlier studies on creating flexible, innovative and alternative workplaces (Danielsson and Bodin, 2008; McElroy and Morrow, 2010).

Table III.
Change of work
practices in the
science faculty

Work practices	Observed in main	Conceived for open plan	Observed in start
Selecting work place	Personal rooms	For each work practice a different room	Occupying one-person or two person rooms for all work activities
Selection of location in space	Fixed room	Mixing of employees	Preference for bookshelves Away from movement and noise
Negotiation on rooms	Rooms with best views	Equal use of different room	Formally assigned rooms Informal fixed rooms
Doing of research	In room with books around, door closed	In one or two person rooms with clean desk policy	Clean desk At home, quite one-person work place
Meeting with colleagues	Chatting at personal work room	Easy to find because of transparent building	Chatting in transparent rooms and open offices
Meeting with students	Students pass by Meeting in personal rooms	In open and closed space in the mixed zone	Formal appointments Meeting at mixed zone and accompanying to inner space

The findings showed that the spatial intervention simultaneously resulted in: the emerge of new work practices: the change of old work practices: and the persistence of old work practices. Each category contains both intended and unintended outcomes and obviously there is overlap between these three categories, but in this way we can analyze more precisely how practices change (or not). First, we found new intended spatial practices such the selection of a work place and a work location, the negotiation over rooms and the keeping clean of all desks, practices that had not been practiced in Main. Furthermore, colleagues more visible to one another, thereby enhancing spontaneous encounters and a stronger identification with the faculty, at least on that particular floor. These findings are in line with Irving (2016) who states that open-plan offices are “scaffolds” for collaborations. However, staff members have shown to be no passive receivers of change interventions but that they actively attribute meaning to new spatial practices and appropriate it in their own way as we have seen in occupying rooms for a whole day, working at home more frequently and hiding of emotions.

Second, a number of old work practices have changed under influence of, for example, the experienced lack of privacy, the noisy corridors, the locked entrance and the absence of books. These were both intended, for example, less load talking when meeting colleagues, and unintended, for example, the meeting of staff with students in this enclosed area. This final example shows the importance of Lefebvre’s (1991) concept of perceived space. Staff perceived the enclosed space to be a safe space where one could be “invisible” for students while the outer space was demarcated to be students’ territory: unsafe; busy; and noisy settings. In this way, the mixed zone, intended for staff and students to jointly learn swiftly turned into a “student” territory, which was avoided by staff members. These findings are in line with earlier studies (e.g. Pepper, 2008; Brown *et al.*, 2005; Bektas, 2013) who showed that the demarcation of group territory prevented employees from collaboration.

Third, our findings show that a major part of the old work practices remained the same and, thus, show the persistence of routines and work practices. For example, in the selection of work places a clear hierarchy of rooms related to social order could be observed; the higher in rank the more one could claim fixed, private rooms. These practices appeared to be deeply embedded in organizational norms and values (Dale and Burrell, 2008). Space is, thus, a product of the embodied lived experience of end users which cannot always be predicted (Wilhoit *et al.*, 2016) as different people attribute different meanings to the space and appropriate it as they see fit (Peltonen, 2011). In this way, higher ranking personnel demarcating a flexible work place as their own and forcing lower ranking staff, such as PhDs, to accept this, is a continuation of the organizational hierarchy, yet undermining the flexible work concept.

Spatial interventions change spatial usage and work practices as our study has shown, but often in unpredictable ways. Therefore, our study confirms the claim that “organizational space is always a product of the negotiations between the normative aspects of building design and layout and the potentially creative appropriations and reconstructions of the societally embedded users” (Peltonen, 2011, p. 807). Our findings also provide empirical support for Elsbach and Pratt’s (2007) contention that physical environment interventions yield offsetting results and show that physical work environments are not just simply influencing employee work practices (Irving, 2016). Rather, as we have seen employees have an active role in physically building, maintaining, neglecting and modifying physical work environments, as well as in socially constructing the meanings, norms and values associated with them (Dale and Burrell, 2008; Kornberger and Clegg, 2004).

Moreover, material objects such as glass walls, books, floors, doors and authorization passes played an important role in the work practices and appropriation of spatial settings. These objects not only contained a symbolic message, such as “staff area” or “student zone,” but also were physical demarcations (Bektas, 2013). For example, we observed the floor to be a boundary for the successful execution of the flexible work concept to other floors. In another example of social and material processes mutually enacting (Dale, 2005), staff members missed their own books around them making them feel less academic. These examples support the work of Boivin (2008) who criticized organization literature for privileging the social over the material and state materials affect human life in manifold ways: sensually; emotionally; socially; biologically and even genetically.

Finally, the intention of the open-plan introduction was to minimize costs while maximizing the university’s space. Academic staff members perfectly understood this goal to reduce costs but would rather choose small individual cells than open-plan offices. In agreement with Brennan *et al.* (2002), we think that relocating staff from traditional to open-plan offices is connected to the values and norms of academics, who highly value autonomy, freedom and solitary spaces for reading, writing and doing research. The introduction of the open-plan offices in the science faculty appeared to focus predominately upon the technical realization and pragmatic outcome of the offices, rather than on the culture and experience of academics. Wilhoit *et al.* (2016, p. 812) had similar findings, arguing that “changes to material workspaces are about more than physical layout” and that “faculty workspaces need to consider what workspace means to the users in addition to physical characteristics.” In contrast to the expectations of Wilhoit *et al.* (2016), in our case academics did not really resist or leave the university in response to the introduction of open-plan offices. It is the case that academics generally do not desire these open-plan spaces which must be considered by administrators.

Conclusions

This paper studied the working practices of campus university staff members before, during and after moving from traditional to open-plan offices. Specifically, we investigated how staff members gave meaning to and appropriated their space, and how spatial (re)configurations affected their practices and vice versa. This paper contributes to the academic debate on organizational space by extending the theory on the mutual and recursive relation between spatial intervention and organizational change with empirically grounded insights into how a spatial setting can change work practices and vice versa (e.g. Elsbach and Pratt, 2007; van Marrewijk and Yanow, 2010). Furthermore, the case contributes to the growing debate on open-plan offices at university campuses (Wilhoit *et al.*, 2016; Lancione and Clegg, 2013; Gastelaars, 2010; Peltonen, 2011) with an in-depth case. The growing popularity of open-plan offices at universities with planners, administrators and architects asks for a thorough empirical research of these kind of academic spaces (Wilhoit *et al.*, 2016). Future research might explore in more detail the relation between open-plan offices and the professional

culture of academics. We might also benefit from learning about successful cases of open-plan offices at universities or other forms of collocation in academic settings.

The implications for practitioners, facility managers and university managers are twofold. First, the findings clearly show that a spatial intervention without a strong supportive change process fails to establish intended changes. There is a clear limit to what buildings can do in changing work practices of employees. Especially, the focus should be on the first period after the spatial intervention when employees start to make sense of and give meaning to spaces and adapt their work practices. Therefore, future introductions of open-plan offices at universities should take the change of work practices more serious as they are deeply rooted in the professional culture of academics. Organizing sessions with academic and supporting staff to reflect upon work practices in relation to the new use of open-plan offices can be helpful.

References

- Allen, T. and Henn, G. (2007), *The Organization and Architecture of Innovation: Managing the Flow of Technology*, Butterworth Heinemann, Amsterdam.
- Becker, F. (1981), *Workspace: Creating Environments in Organisations*, Praeger, New York, NY.
- Bektas, E. (2013), *Knowledge Sharing Strategies for Large Complex Building Projects*, Bouwkunde, TU Delft, Delft.
- Beyes, T. and Michels, C. (2011), "The production of educational space: heterotopia and the business university", *Management Learning*, Vol. 42 No. 5, pp. 521-536.
- Boivin, N. (2008), *Material Cultures, Material Minds: The Impact of Things on Human Thought, Society, and Evolution*, Cambridge University Press, Cambridge.
- Boutellier, R., Ullman, F., Schreiber, J. and Naef, R. (2008), "Impact of office layout on communication in a science-driven business", *R&D Management*, Vol. 38, pp. 372-391.
- Brennan, A., Chugh, J. and Kline, T. (2002), "Traditional versus open office design: a longitudinal field study", *Environment and Behavior*, Vol. 34 No. 3, pp. 279-299.
- Brown, G., Lawrence, T.B. and Robinson, S.L. (2005), "Territoriality in organizations", *Academy of Management Review*, Vol. 30 No. 3, pp. 577-594.
- Cameron, K.S. (2003), "Organizational transformation through architecture and design: a project with Frank Gehry", *Journal of Management Inquiry*, Vol. 12 No. 1, pp. 88-92.
- Clair, J.A., Beatty, J.E. and MacLean, T.L. (2005), "Out of sight but not out of mind: managing invisible social identities in the workplace", *Academy of Management Review*, Vol. 30 No. 1, pp. 78-95.
- Dale, K. (2005), "Building a social materiality: spatial and embodied politics in organizational control", *Organization*, Vol. 12 No. 5, pp. 649-678.
- Dale, K. and Burrell, G. (2008), *The Spaces of Organisation & the Organisation of Space: Power Identity & Materiality at Work*, Palgrave MacMillan, Hampshire.
- Dale, K. and Burrell, G. (2010), "'All together, altogether better': the ideal of 'community' in the spatial reorganization of the workplace", in Van Marrewijk, A.H. and Yanow, D. (Eds), *Organizational Spaces: Rematerializing the Workaday World*, Edward Elgar, Cheltenham, pp. 19-41.
- Danielsson, C.B. and Bodin, L. (2008), "Office type in relation to health, well-being, and job satisfaction among employees", *Environment and Behavior*, Vol. 40 No. 5, pp. 636-668.
- Duffy, F. (1980), "Office buildings and organisational change", in King, A. (Ed.), *Buildings and Society*, RKP, London, pp. 255-282.
- Elsbach, K.D. and Bechky, B.A. (2007), "It's more than a desk: working smarter through leveraged office design", *California Management Review*, Vol. 49 No. 2, pp. 80-101.
- Elsbach, K.D. and Pratt, M.G. (2007), "The physical environment in organizations", *The Academy of Management Annals*, Vol. 1 No. 1, pp. 181-224.

- Fayard, A.L. and Weeks, J. (2007), "Photocopiers and water-coolers: the affordances of informal interaction", *Organization Studies*, Vol. 28 No. 5, pp. 605-634.
- Gastelaars, M. (2010), "What do buildings do? How buildings-in-use affect organizations", in Van Marrewijk, A.H. and Yanow, D. (Eds), *Organizational Spaces: Rematerializing the Workaday World*, Edward Elgar, Cheltenham, pp. 77-95.
- Gieryn, T.F. (2002), "What buildings do", *Theory and society*, Vol. 31, pp. 35-74.
- Gioia, D.A., Corley, K.G. and Hamilton, A.L. (2013), "Seeking qualitative rigor in inductive research: notes on the Gioia methodology", *Organizational Research Methods*, Vol. 16 No. 1, pp. 15-31.
- Hancock, P. (2006), "The spatial and temporal mediation of social change", *Journal of Organizational Change Management*, Vol. 19 No. 5, pp. 619-639.
- Hernes, T.T., Bakken, P. and Olsen, O. (2006), "Spaces as process: developing a recursive perspective on organisational space", in Clegg, S. and Kornberger, M. (Eds), *Space, Organizations and Management Theory*, Liber and Copenhagen Business School Press, Copenhagen, pp. 33-63.
- Higgins, J., McAllaster, C., Certo, S. and Gilbert, J. (2006), "Using cultural artifacts to change and perpetuate strategy", *Journal of Change Management*, Vol. 6, pp. 397-415.
- Hurdley, R. (2010), "The power of corridors: connecting doors, mobilising materials, plotting openness", *The Sociological Review*, Vol. 58 No. 1, pp. 45-64.
- Irving, G.L. (2016), "Collaboration in open-plan offices", UQ Business School Sydney, University of Queensland Business School, Sydney.
- Kenis, P., Kruijen, P.M. and Baaijens, J. (2010), "Bendable bars in a Dutch prison: a creative place in a non-creative space", in Van Marrewijk, A. and Yanow, D. (Eds), *Organisational Spaces: Rematerializing the Workaday World*, Edward Elgar, Northampton, pp. 58-76.
- Kornberger, M. and Clegg, S. (2004), "Bringing space back in: organizing the generative building", *Organization Studies*, Vol. 25 No. 7, pp. 1095-1114.
- Kotter, J.P. and Cohen, D.S. (2002), *The Heart of Change: Real-life Stories of How People Change Their Organisations*, Harvard Business School Press, Boston, MA.
- Lancione, M. and Clegg, S. (2013), "The chronotopes of change: actor-networks in a changing business school", *Journal of Change Management*, Vol. 13 No. 2, pp. 117-142.
- LeCompte, D.M. and Schensul, J.J. (2013), *Analysis & Interpretation of Ethnographic Data*, Altamira, New York, NY.
- Lefebvre, H. (1991), *The Production of Space*, Basil Blackwell, Oxford.
- Leonardi, P.M., Nardi, B.M. and Kallinikos, J. (2012), *Materiality and Organizing: Social Interaction in a Technological World*, Oxford University Press, Oxford.
- McElroy, J.C. and Morrow, P.C. (2010), "Employee reactions to office redesign: a naturally occurring quasi-field experiment in a multi-generational setting", *Human Relations*, Vol. 63 No. 5, pp. 609-636.
- Nicolini, D., Gherardi, S. and Yanow, D. (2003), *Knowing in Organizations: A Practice-Based Approach*, M.E. Sharpe, London.
- O'Toole, P. and Were, P. (2008), "Observing places: using space and material culture in qualitative research", *Qualitative Research*, Vol. 8 No. 5, pp. 616-634.
- Orlikowski, W.J. (2007), "Sociomaterial practices: exploring technology at work", *Organization Studies*, Vol. 28 No. 9, pp. 1435-1448.
- Peltonen, T. (2011), "Multiple architectures and the production of organizational space in a Finnish university", *Journal of Organizational Change*, Vol. 24 No. 6, pp. 806-821.
- Pepper, G. (2008), "The physical organization as equivocal message", *Journal of Applied Communication Research*, Vol. 36 No. 3, pp. 318-338.
- TU-Delft (2016), "Campus NL: Investeren in de toekomst [Investment in the future]", TU Delft, Faculteit Bouwkunde, Afdeling Management in the Built Environment, Delft.
- Tyler, M. and Cohen, L. (2010), "Spaces that matter: gender performativity and organizational Space", *Organization Studies*, Vol. 31 No. 2, pp. 175-198.

-
- Van Marrewijk, A.H. (2009), "Corporate headquarters as physical embodiments of organisational change", *Journal of Organisational Change Management*, Vol. 22 No. 3, pp. 290-306.
- Van Marrewijk, A.H. and Broos, M. (2012), "Retail stores as brands: performances, theatre, and space", *Consumption, Markets and Culture*, Vol. 15 No. 4, pp. 374-391.
- Van Marrewijk, A.H. and Yanow, D. (2010), "The spatial turn in organization studies", in Marrewijk, A.H. and Yanow, D. (Eds), *Organizational Spaces. Rematerializing the Workaday World*, Edward Elgar, Northampton, pp. 1-19.
- Warren, S. (2008), "Empirical challenges in organizational aesthetics research: towards a sensual methodology", *Organization Studies*, Vol. 29 No. 4, pp. 559-580.
- Wilhoit, E., Gettings, P., Malik, P., Hearit, L. and Buzzanell, P. (2016), "STEM faculty response to proposed workspace changes", *Journal of Organizational Change Management*, Vol. 29, pp. 804-815.
- Yanow, D. (2006), "Studying physical artifacts: an interpretive approach", in Anat, R. and Pratt, M. (Eds), *Artifacts and Organizations*, Lawrence Erlbaum Associates, Mahwah, NJ, pp. 41-60.
- Ybema, S., Yanow, D., Wels, H. and Kamsteeg, F. (2009), *Organizational Ethnography: Studying the Complexities of Everyday Life*, Sage, London.

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